REMARKS

Claims 1-4 and 14 are currently pending. Claims 1-4 and 14 stand rejected under 35 U.S.C. 102 and 103 as allegedly being unpatentable in view of U.S. Published Patent Application No. 2004/0023514 to Moriya et al. ("Moriya").

In view of the amendments and remarks herein, the rejections are respectfully traversed. Reconsideration and allowance are respectfully requested.

Claim 1

Claim 1 is patentable over Moriya because Moriya neither teaches nor suggests that carbon nanotubes be "positioned between the first conductive alignment region and the second conductive alignment region," and have first and second end portions in communication with first and second conducting contact regions, as recited in claim 1.

Instead, the nanotubes of Moriya are in one of two configurations. Some of the nanotubes overlap either the source region, the drain region, or both. The office action acknowledges this in the rejection of claim 2 ("the S/D or alignment spacing is slightly smaller than the CNT length, ..."). Figure 2D appears to also show some nanotubes that are between the source and drain regions, but these nanotubes do not have

first and second end portions in communication with first and second conducting contact regions.

Thus, claim 1 is patentable at least because Moriya neither teaches nor suggests this feature of claim 1.

Additionally, it would not have been obvious to modify Moriya to include such a feature, since there is no motivation in the references to make such a modification. Indeed, since Moriya uses a different method of aligning carbon nanotubes (dropping a carbon nanotube solution on the circuit structure, and applying an alternating voltage across source and drain regions; see e.g. page 3, paragraph 0045 of Moriya), such a modification would require substantial changes to Moriya.

For at least this additional reason, claim 1 is patentable over Moriya.

Claims 2-4

Claims 2-4 depend from claim 1, and are thus patentable for at least the same reasons as stated above with respect to claim 1.

Claim 14

Claim 14 is patentable over Moriya at least because Moriya neither teaches nor suggests "a carbon nanotube having a first end portion adjacent to and in communication with one of the plurality of device interconnection regions," as recited in claim 14.

In contrast, Moriya uses carbon nanotubes "for a channel region formed between a source electrode and a drain electrode." (Please see the Abstract of Moriya). Thus, the end portions of the carbon nanotubes of Moriya are adjacent to source and drain regions rather than device interconnection regions.

An exemplary implementation incorporating the features of claim 14 is described in the current specification on page 9, paragraph 29 et seq. In that example, carbon nanotubes may be used to connect an integrated circuit to a packaging substrate. The benefits that may accrue in such an implementation include reduced electromigration failure, increase in the achievable device density, and decreased stress damage. (Please see pages 9 and 10, paragraphs 29 and 30 of the current specification).

For at least this reason, claim 14 is patentable over Moriya.

Further, a modification of Moriya to include these features would not have been obvious, since there is no motivation in the references to do so.

For at least this additional reason, claim 14 is patentable over Moriya.

CONCLUSION

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue, or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Claims 1-4 and 14 are in condition for allowance, and a notice to that effect is respectfully solicited. If the Examiner has any questions regarding this response, the Examiner is invited to telephone the undersigned at (858) 678-4311.

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No fees are believed due at this time. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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